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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kenji Okishiro

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EXAMINER

STONE, ROBERT M

ART UNIT

PAPER NUMBER

2629

NOTIFICATION DATE

DELIVERY MODE

09/18/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/539,066	Applicant(s) OKISHIRO ET AL.	
	Examiner Robert M. Stone	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 7-8 and 11-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 June 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 04 June 2009 has been entered and considered by the examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by *Hirakata* (US 2002/0036608).

As to **claim 1**, *Hirakata* discloses a liquid crystal display (title) comprising:

a light source made of a plurality of light emitting tubes (backlight system for the LCD panel contains multiple fluorescent lighting tubes and/or cold-cathode tubes [0005 and 0226]; Fig. 31) each having one or more kinds of phosphors (each fluorescent lamp contains multiple phosphors [0192]), and having a turned-on state and a turned-off state within one frame (turned on and off in one period [0006, 0011 and 0148]; Fig. 11a, c, and d); and

a liquid crystal panel for adjusting the amount of light transmitted from said light source (driving circuitry of Fig. 1 is used to control the amount of light

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emitted from the tubes while the LCD panel itself is driven by the image data in order to twist/untwist the liquid crystal molecules to adjust the amount/color of light seen by the user [0068]);

wherein a luminance factor area of light from each of said phosphors or a change in luminance factor per time of said light is substantially equal to that of light from any other phosphor in at least one of a luminance rise time when said light source changes from said turned-off state to said turned-on state and a luminance fall time when said light source changes from said turned-on state to said turned-off state (by adjusting the current used to drive the backlight tubes of the display, the rise and fall times of the brightness/luminance curve is manipulated decreasing the luminance factor area under the rise and fall curves by increasing the current supplied to the tube. As shown in Fig. 18b-e, increasing the current shrinks the period of rise and fall times of the backlight brightness. Since this backlight brightness measurement is taken as a whole, however includes multiple colored phosphors [00192], it is understood that shrinking these waveforms shrinks the rise and fall times of each phosphor making them substantially equal. Further, there is no mention of any phosphor extremes that might attribute to longer rise/fall times than those illustrated; Fig. 10, 11d, and 18b-e).

As to **claim 2**, *Hirakata* discloses wherein said light source is made of light emitting tubes of one kind (fluorescent lamps [0011] of cold-cathode tubes [0021 and 0062]), and each of said light emitting tubes is a multicolor light emitting tube

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having three or more kinds of phosphors (using multiple phosphors red/green/blue [0192]).

As to **claim 3**, *Hirakata* discloses wherein luminance of said phosphors is controlled by a current value of a current applied to each of said light emitting tubes (adjusts the current value of the light emitting tube driving current in order to control the brightness/luminance of the display [0022]; Fig. 11c).

As to **claim 4**, *Hirakata* discloses wherein at the beginning of said luminance rise time, said current value of said current applied to said light emitting tube is a current value I_2 (at the beginning of the rise of the brightness shown in Fig. 11d, the current being supplied to the backlight lamps is I_1 [0022]; Fig. 11c) not smaller than a current value I_1 (after current value I_1 is supplied the backlight current is dropped to current I_2 [0022]) necessary for said phosphors to emit light with predetermined luminance in one frame (the driving current is that necessary to acquire the backlight brightness waveform as shown in Fig. 11d).

As to **claim 9**, *Hirakata* discloses wherein a current value of a current applied to each of said light emitting tubes is attenuated stepwise in said luminance fall time (backlight driving current steps down from current I_1 to current I_2 [0022]; Fig. 11c).

Allowable Subject Matter

4. Claims 5-6 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. As to claim 5, *Hirakata* does not disclose the timing of the application of currents according to phosphor response time as specified in claimed Expression 1.

b. As to claim 10, *Hirakata* discloses a single step down from current I1 to current I2 in a period where the step width is shorter than the luminance fall response time of the a slow luminance response phosphor, however fails to disclose where the time width of the step is longer than the luminance fall response time of a fast luminance response phosphor.

Response to Arguments

5. Applicant's arguments filed 04 June 2009 have been fully considered but they are not persuasive.

a. As to claim 1, Applicant submitted that *Hirakata* does not teach or fairly suggest "one or more kinds of phosphors". Examiner respectfully disagrees.

Hirakata teaches fluorescent lamps that contain multiple phosphors where those phosphors attribute to the afterglow (or fall time) of the fluorescent lamp and therefore techniques such as different combinations have been used to manage that [0192]. Furthermore, the claim recites "one or more" in which case *Hirakata*

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clearly teaches the usage of at least one phosphor within the lamp [0132, 0133, 0143].

b. Further, as to claim 1, Applicant submitted that *Hirakata* does not teach or fairly suggest “luminance factor area of light” or a “change in luminance factor per time of the light”. Examiner respectfully disagrees. The instant application refers to the area under the rise and fall time curves of the luminance waveforms (i.e., shaded portion under curves of Fig. 1) as being luminance factor [0068]. *Hirakata* teaches the luminance waveforms of the fluorescent backlight tubes (Figs. 18b-e) wherein the area under rising part of the curve as well as the area under the falling part of the curve (i.e., luminance factor area) are both reduced (i.e., changed) for the backlight tube according to the cited driving method.

c. Further, as to claim 1, Applicant submitted that *Hirakata* does not teach or fairly suggest “making the rise and fall times of each phosphor substantially equal”. *Hirakata* teaches altering the driving current of a fluorescent tube backlight [abstract] in order to decrease the rise and fall times of the backlight luminance wherein the luminance rise and fall times are substantially equal (e.g., Fig. 18c shows the rise times for the backlight are substantially equal from period t0 to period t6 and the fall times are substantially equal from period t0 to period t6 and neither changes as the backlight is driven). Further, claim 1 recites “one or more phosphors” and therefore does not even require multiple phosphors. In which case, the same analysis above is applied. Furthermore, it should be noted that the limitation does not require the “rise and fall times of each phosphor to be

substantially equal” as argued by the Applicant. The limitation is drawn to the area under the rise and fall curves not the times themselves as is being argued. This area is not directly proportional to rise and fall times without defining a starting and ending point for measuring the rise/fall times (i.e., 0-90% or 10-90% or 0-100%).

6. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., “rise and fall times of different color phosphors and the making of such rise and fall times of the different color phosphors substantially equal to one another”) are not recited in the rejected claim 1 as Applicant has argued. There is in fact no mention of “different colors” in the limitations. Further, rejected claim 1 does not even require multiple phosphors per limitation “one or more kinds of phosphors”. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. *Koichi* (JP 2002-072208 cited in IDS on 06/15/2005) teaches a well-known backlight driving system for an LCD display using fluorescent, cold cathode, electroluminescent or hot cathode tubes having 3 or more

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phosphors (red, green, and blue [0004, 0013, 0019]) which not only recognizes the problem of differing rise and fall times for different color phosphors [0004, 0008, 0019] but also teaches driving the backlight in a manner which allows the adjustment of these rise and fall times so that all the phosphors (red, green, and blue) are made substantially equal [0009, 0011, 0013, 0016].

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Stone whose telephone number is (571)270-5310. The examiner can normally be reached on Monday-Friday 9 A.M. - 4:30 P.M. E.S.T. (alternate Fridays off).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh D. Nguyen can be reached on (571)272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert M Stone/
Examiner, Art Unit 2629

/Chanh Nguyen/
Supervisory Patent Examiner, Art
Unit 2629